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← **MAT2550, section ONL6FA_ONL6F, Summer 2 2021**

Week 7 Math 2550 (Homework)

INSTRUCTOR
Bradford Thompson
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Current Score

QUESTION	1	2	3	4	5	6	7	8	9	10	11	12	13
POINTS	–/3.57	–/3.57	–/3.57	–/3.57	–/3.57	–/3.57	–/3.57	–/3.57	–/3.57	–/3.57	–/3.57	–/3.57	–/3.

TOTAL SCORE

–/99.99999999	0.0%

Due Date

TUE, SEP 7, 2021
11:59 PM EDT

Request Extension

Assignment Submission & Scoring

Assignment Submission

For this assignment, you submit answers by questions. You are required to use a new randomization after every 3 question submissions.

Assignment Scoring

Your best submission for each question part is used for your score.

1. **[-/3.57 Points]** DETAILS **LARPCALC10 5.1.004.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Fill in the blank to complete the trigonometric identity.

$$\sec\left(\frac{\pi}{2} - u\right) =$$

Need Help? Read It

2. **[-/3.57 Points]** DETAILS **LARPCALC10 5.1.003.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Fill in the blank to complete the trigonometric identity.

$$\frac{1}{\tan u} =$$

Need Help? Read It

3. **[–/3.57 Points]** DETAILS **LARPCALC10 5.1.001.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Fill in the blank to complete the trigonometric identity.

$$\frac{\sin u}{\cos u} =$$

Need Help? Read It

4. **[-/3.57 Points]** DETAILS **LARPCALC10 5.1.007.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Use the given conditions to find the values of all six trigonometric functions. (If an answer is undefined, enter UNDEFINED.)

$\sec(x) = -\frac{9}{4}, \quad \tan(x) < 0$

$\sin(x) =$

$\cos(x) =$

$\tan(x) =$

$\csc(x) =$

$\sec(x) =$

$\cot(x) =$

Need Help? Read It Watch It

5. **[–/3.57 Points]** DETAILS **LARPCALC10 5.1.010.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Use the given conditions to find the values of all six trigonometric functions. (If an answer is undefined, enter UNDEFINED.)

$\cos(\theta) = \frac{1}{3}, \quad \sin(\theta) < 0$

$\sin(\theta) =$

$\cos(\theta) =$

$\tan(\theta) =$

$\csc(\theta) =$

$\sec(\theta) =$

$\cot(\theta) =$

Need Help? Read It Watch It

6. **[–/3.57 Points]** DETAILS **LARPCALC10 5.1.012.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Use the given conditions to find the values of all six trigonometric functions. (If an answer is undefined, enter UNDEFINED.)

$\cot(x) = \frac{7}{4}, \quad \sin(x) < 0$

$\sin(x) =$

$\cos(x) =$

$\tan(x) =$

$\csc(x) =$

$\sec(x) =$

$\cot(x) =$

Need Help? Read It Watch It

7. **[-/3.57 Points]** DETAILS **LARPCALC10 5.1.013.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Match the trigonometric expression with its simplified form.

$\sec(x)\cos(x)$

- ○ -1
- ○ 1
- ○ $\csc(x)$
- ○ $\sec(x)$
- ○ $\sin(x)\tan(x)$
- ○ $\sec^2(x)$

Need Help? Read It

8. **[–/3.57 Points]** DETAILS **LARPCALC10 5.1.015.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Match the trigonometric expression with its simplified form.

$\cos(x)(1 + \tan^2(x))$

- ○ $\sin(x)\tan(x)$
- ○ $\cos(x) + \sin(x)$
- ○ $\sec^2(x)$
- ○ $\csc(x)$
- ○ $\sec^2(x) + \tan^2(x)$
- ○ $\sec(x)$

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9. **[–/3.57 Points]** DETAILS **LARPCALC10 5.1.018.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Match the trigonometric expression with its simplified form.

$$\frac{\cos^2[(\pi/2) - x]}{\cos(x)}$$

- ○ $\sec(x)$
- ○ $\csc(x)$
- ○ 1
- ○ $\sin(x)\tan(x)$
- ○ -1
- ○ $\sec^2(x)$

Need Help? Read It

10. **[-/3.57 Points]** DETAILS **LARPCALC10 5.1.020.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Use the fundamental identities to simplify the expression. (There is more than one correct form of the answer.)

$$\cos\left(\frac{\pi}{2} - x\right) \sec(x)$$

Need Help? Read It

11. **[-/3.57 Points]** DETAILS **LARPCALC10 5.1.022.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Use the fundamental identities to simplify the expression. (There is more than one correct form of the answer.)

$$\sin^2(x) \sec^2(x) - \sin^2(x)$$

Need Help? Read It

12. **[-/3.57 Points]** DETAILS **LARPCALC10 5.1.024.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Factor the expression. Use the fundamental identities to simplify, if necessary. (There is more than one correct form of each answer.)

$$\frac{\cos(x) - 4}{\cos^2(x) - 16}$$

Need Help? Read It

13. **[-/3.57 Points]** DETAILS **LARPCALC10 5.2.004.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Fill in the blank to complete the fundamental trigonometric identity.

$$\frac{\cos u}{\sin u} =$$

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14. **[-/3.57 Points]** DETAILS **LARPCALC10 5.2.006.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Fill in the blank to complete the fundamental trigonometric identity.

$1 +$ ____

$= \csc^2(u)$

Need Help? Read It

15. **[-/3.57 Points]** DETAILS **LARPCALC10 5.2.007.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Fill in the blank to complete the fundamental trigonometric identity.

$\csc(-u) =$ ____

Need Help? Read It

16. **[-/3.57 Points]** DETAILS **LARPCALC10 5.2.009.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Verify the identity. (Simplify at each step.)

$$\tan t \cot t = 1$$

$$\tan t \cot t = \frac{\square}{\square} \cdot \frac{\cos t}{\sin t} = 1$$

$$\frac{}{\cos t}$$

Need Help? Read It

17. **[–/3.57 Points]** DETAILS **LARPCALC10 5.2.012.MI.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Verify the identity.

$$5\cos^2\beta - 5\sin^2\beta = 10\cos^2\beta - 5$$

$$5\cos^2\beta - 5\left(1 - \square\right)$$

$$5\cos^2\beta - 5\sin^2\beta = \square$$

$$\square$$

$$5\cos^2\beta + 5$$

$$= \square$$

$$\square$$

$$- 5$$

$$= 10\cos^2\beta - 5$$

Need Help? Read It Watch It Master It

18. **[-/3.57 Points]** DETAILS **LARPCALC10 5.2.015.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Verify the identity. (Simplify at each step.)

$$\tan\left(\frac{\pi}{2} - \theta\right)\tan\theta = 1$$

$$\tan\left(\frac{\pi}{2} - \theta\right)\tan\theta = \frac{\left(\quad\right)}{\left(\quad\right)}\tan\theta$$

$$= \left(\frac{1}{\left(\quad\right)}\right)\tan\theta$$

$$= 1$$

Need Help? Read It

19. **[-/3.57 Points]** DETAILS **LARPCALC10 5.2.019.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Verify the identity algebraically. Use the *table* feature of a graphing utility to check your result numerically. (Simplify at each step.)

$$\frac{3}{\tan(x)} + \frac{3}{\cot(x)} = 3\tan(x) + 3\cot(x)$$

$$\frac{3}{\tan(x)} + \frac{3}{\cot(x)} = \frac{3\cot(x) + 3\tan(x)}{\left(\quad\right)\cot(x)}$$

$$= \frac{3\cot(x) + 3\tan(x)}{\quad}$$

$$= \quad$$

$$= 3\tan(x) + 3\cot(x)$$

Need Help? Read It

20. **[–/3.57 Points]** DETAILS **LARPCALC10 5.2.021.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Verify the identity algebraically. Use the *table* feature of a graphing utility to check your result numerically. (Simplify at each step.)

$$\frac{1 + \sin(\theta)}{\cos(\theta)} + \frac{\cos(\theta)}{1 + \sin(\theta)} = 2\sec(\theta)$$

$$\frac{1 + \sin(\theta)}{\cos(\theta)} + \frac{\cos(\theta)}{1 + \sin(\theta)} = \frac{(\quad)^2 + \cos^2(\theta)}{\cos(\theta)(1 + \sin(\theta))}$$

$$= \frac{(\quad) + \sin^2(\theta) + \cos^2(\theta)}{\cos(\theta)(1 + \sin(\theta))}$$

$$= \frac{2 + 2(\quad)}{\cos(\theta)(1 + \sin(\theta))}$$

$$= \frac{2(\quad)}{\cos(\theta)(1 + \sin(\theta))}$$

$$= \frac{\square}{\cos(\theta)(1 + \sin(\theta))}$$

$$= \frac{2}{\cos(\theta)}$$

$$= 2\sec(\theta)$$

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21. **[-/3.57 Points]** DETAILS **LARPCALC10 5.3.003.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Fill in the blank.

The equation $2\tan^2(x) - 3\tan(x) + 1 = 0$ is a trigonometric equation of [ ] type.

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22. **[–/3.57 Points]** DETAILS **LARPCALC10 5.3.005.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Verify that each x-value is a solution of the equation.

$$\tan(x) - \sqrt{3} = 0$$

(a) $x = \dfrac{\pi}{3}$

$$\tan\left(\frac{\pi}{3}\right) - \sqrt{3} = \square$$

$$= 0$$

(b) $x = \dfrac{4\pi}{3}$

$$\tan\left(\frac{4\pi}{3}\right) - \sqrt{3} = \square$$

$$= 0$$

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23. **[–/3.57 Points]** DETAILS **LARPCALC10 5.3.010.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Verify that each x-value is a solution of the equation.

$$4\csc^4(x) - 16\csc^2(x) = 0$$

(a) $x = \dfrac{\pi}{6}$

$$4\csc^4\left(\frac{\pi}{6}\right) - 16\csc^2\left(\frac{\pi}{6}\right) = \square - 64$$

$$= 0$$

(b) $x = \dfrac{5\pi}{6}$

$$4\csc^4\left(\frac{5\pi}{6}\right) - 16\csc^2\left(\frac{5\pi}{6}\right) = \square - 64$$

$$= 0$$

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24. **[-/3.57 Points]** DETAILS **LARPCALC10 5.3.011.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Solve the equation. (Enter your answers as a comma-separated list. Use n as an integer constant. Enter your response in radians.)

$$\sqrt{3}\csc x - 2 = 0$$

$x =$

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25. **[-/3.57 Points]** DETAILS **LARPCALC10 5.3.013.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Solve the equation. (Enter your answers as a comma-separated list. Use n as an integer constant. Enter your response in radians.)

$$3\cos x + 2 = -\cos x$$

$x =$

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26. **[-/3.57 Points]** DETAILS **LARPCALC10 5.3.014.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Solve the equation. (Enter your answers as a comma-separated list. Use n as an integer constant. Enter your response in radians.)

$$5 \sin x + 2 = \sin x$$

$x =$

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27. **[-/3.57 Points]** DETAILS **LARPCALC10 5.3.016.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Solve the equation. (Enter your answers as a comma-separated list. Use n as an integer constant. Enter your response in radians.)

$$3 \cot^2 x - 1 = 0$$

$x =$

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28. **[-/3.61 Points]** DETAILS **LARPCALC10 5.3.020.** 0/15 Submissions Used MY NOTES ASK YOUR TEACHER

Solve the equation. (Enter your answers as a comma-separated list. Use n as an integer constant. Enter your response in radians.)

$$(2 \sin^2 x - 1)(3 \tan^2 x - 1) = 0$$

$x =$

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